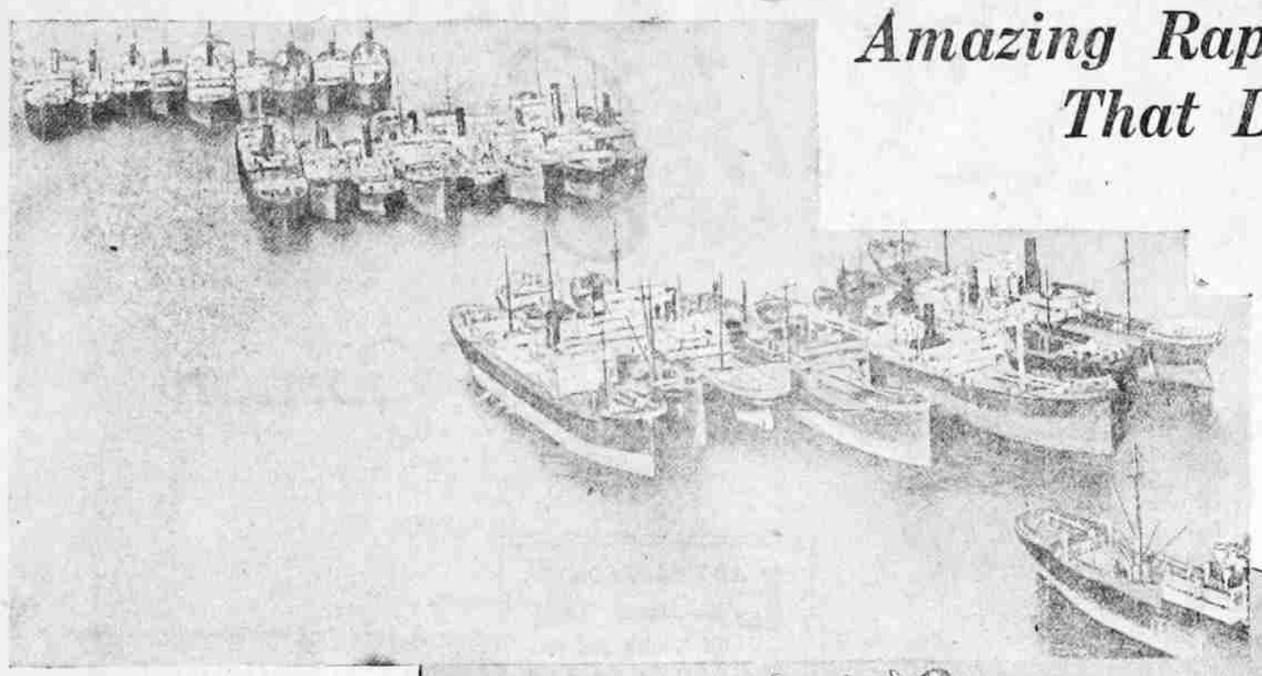
Fighting a Worm that Scuttles Ships

Amazing Rapaciousness of the Newest Marine Pest That Destroys Piers and Wharves, and Even Attacks Ocean Craft and Now Is Threatening to Do More Damage Than Torpedoes and Submarines Did During All the War



One of the "Out of Commission" Fleets of Emergency Wooden Ships Built During the War and Now Threatened with Destruction by the Vicious Marine Borer.

A NEW "monster of the deep" is attacking and sinking American ships.

It is a marine animal—a worm only a few inches long—yet it is proving even more deadly than its huge mechanical cousins, the torpedo and submarine.

Already it has done damage to ships and harbor structures aggregating many millions of dollars and is breeding with such incredible rapidity in American waters that the National Research Council and Engineering Foundation has formed working committees in all the principal ports to combat its ravages.

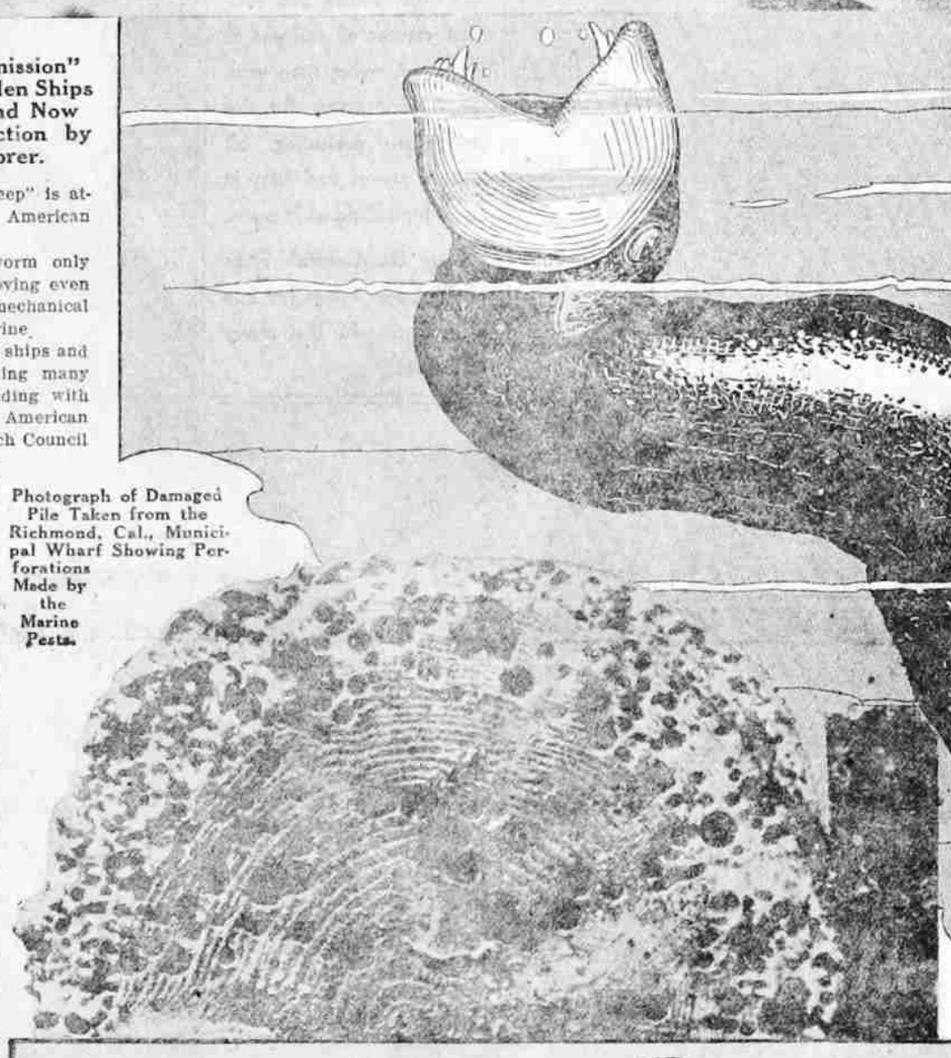
Though one of the smallest free-swimming creatures that live in the ocean, the ship-worm is probably the only one that has ever successfully attacked a large vessel.

There are weird sea tales of how enormous ocean monsters—sometimes a giant octopus, sometimes an enormous swordfish, even great sea serpents—have dragged helpless vessels under the waves.

Five hundreds years ago such marvels were generally believed. To-day nobody believes them. Science classes them as myths. In fact, modern science declared that the ocean had never given birth to any living creature that could attack a ship. Such ideas, said science, were absurd—

—Until the ship-worm came along.

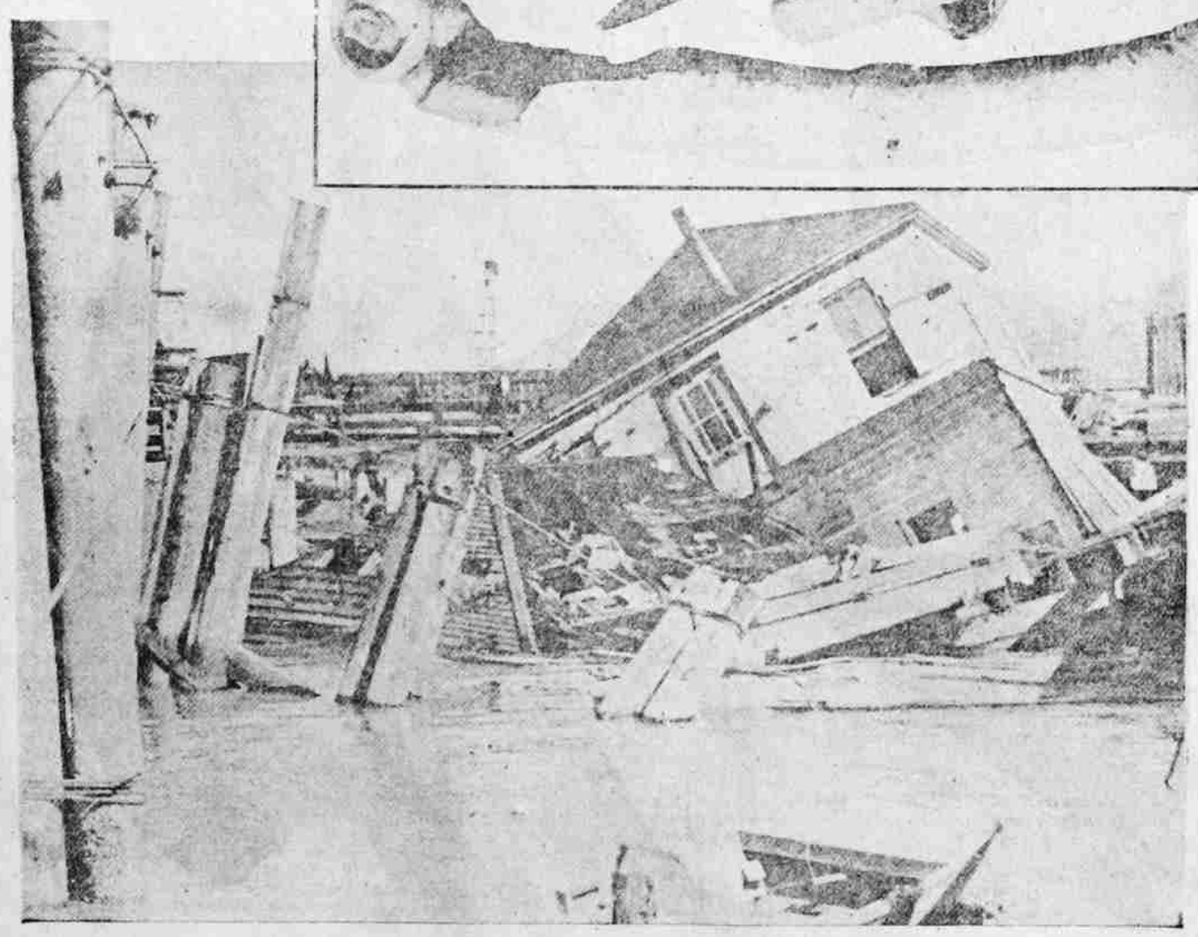
And now the ship-worm—a real sea serpent—the only dangerous sea serpent despite its tiny size, is ravaging shipping



Photograph of Damaged Pile Taken from the Richmond, Cal., Municipal Wharf Showing Perforations Made by the Marine Pests.

Part of the Ruined Piling Supporting a Pier at Miami, Fla., Which the Borers Attacked and Demolished Within Six Weeks.

This Photograph Shows Exactly What Happened to the Municipal Wharf and Dockmaster's Office at Benicia, Cal., When Attacked by the Boring Worm.



Actual Photograph (Enlarged Three Times Life Size) of Teredo, Showing the Blunt Head with Which Holes Are Drilled Through the Stout Sides of Wooden Ships.

as it has never been ravaged before except in time of war.

The ship-worm is a member of the "marine borer" family. The branch of the family that has invaded American waters is called the teredo. It grows from two inches to three feet in length. Usually it is about three to six inches. It has a long, soft body, a head armed with rasp-like teeth that cut wood like a couple of circular saws. Its tail is equipped with fins.

It swims freely, and at the first opportunity attaches itself by the head to any wood—the hull of a wooden ship or the piling of harbor structures—that is not protected by steel, concrete, or other armor.

Then it burrows in, apparently for the purpose of making itself a home, and lives in the hole it has made, with the head toward the inside of the piling and the tail sticking out through the "doorway."

The outer surface of the body secretes a lime-like substance which forms a shell, lining the walls of the hole. The tail is equipped with two siphons, and a stream of water is continually siphoned through the worm's body. The head with its rasping teeth continually gnaws into the wood, while the fine sawdust passes out with the water through the animal's body and is siphoned away.

The borers do not appear singly. They attack the hull of a ship in enormous numbers. There may be as many as 100,000 of them in a single heavy plank, and they completely riddle a piece of timber 20 inches thick in less than six months.

The young originate from eggs hatched in the body of the female and reach unbelievable numbers. There may be as many as 50,000 females in a single piece of timber, and each female may give birth to 1,000,000 live young ship-worms. They begin boring at a very early age, and live for several months.

The teredo ship-worms made their first American appearance in San Francisco Bay, where they have already destroyed ships and have also caused the destruction of railroad, industrial and marine harbor structures, by cutting away the piling, to the extent of nearly $20,000,000.

They have completely ruined the Alameda Mole piling, which only lasted about twenty months after its completion. Some of the piling of various structures in the Golden Gate only lasted six months. At Oleum, California, they so weakened the piling of the dock that it collapsed and fell into the bay, taking several loaded freight trains with it. The municipal wharf and offices at Benecia collapsed completely and went into deep water, while a big ferry slip was so riddled by the ship-worms that it too went to pieces.

In a report just made by Alfred D. Flinn, secretary of the Engineering Foundation, which is affiliated with the three big American engineering societies, he says:

"What seems to be the true teredo navalis has been found in New Jersey waters. If it follows the course it has pursued at San Francisco, there is a possibility of its appearance in New York and other congested harbors all along the Atlantic coast. This species has also been found at Bayside, Long Island, and other marine borers are now destructive in southern ports.

"These marine borers occur with the greatest frequency in warmer seas, but on the Atlantic coast they have already come as far north as Maine, and on the Pacific coast as far as Seattle and Alaska. On the Atlantic coast their attacks up to now have been of prime importance south of Delaware Bay."

Extermination of the ship-worm is believed to be impossible, but it is expected

The Teredo Navalis, or Boring-Worm, Which Now Threatens to Rival the Torpedo as a Ship Destroyer.

that the systematic warfare against their ravages will effect a great saving.

It was discovered in San Francisco that creosoting, if properly done, was fairly effective. But it was also shown that if even a very small break or abrasion occurred in the coating, the worms soon found it and riddled the timber.

In some places an effort has been made to kill the borers by the millions by putting chlorine in the water. This proved ineffective because the tide carried the poison away before it could complete its work.

In connection with the plans now under way for a general war on the ship-worm, the combined engineering societies of America have just issued a statement disclosing successful methods of fighting the ship-worm, and announcing the appointment of a committee of investigation by the National Research Council.

And so it comes about to-day that the most powerful forces of American engineering and chemical science are being marshaled to wage warfare on a worm.

These combined forces do not expect to exterminate the marine pest, but they confidently hope to reduce its ravages and to effect enormous savings for the wooden shipping and harbor interests of the entire nation.